

may. Various operations of the description below and the claims are described in terms of software, e.g. instructions executed by a processor, either a general purpose processor, or a more task-specific processor such as an embedded processor or digital signal processor. However, the various operations may of course be embodied by software, hardware, firmware, or a combination thereof.

Figure 1 shows an embodiment 100 of an image of a cup in accordance with the present invention. The cup is used herein as an example of an article of merchandise that may be personalized for sale to a consumer. Of course, in accordance with the present invention, many other items of merchandise may be used and the invention is not limited in scope in this respect. In one embodiment, the image of the cup as an available article of merchandise (either for free or for purchase) may be presented to a consumer on a web page of the WWW. The web page may be presented to the display of a consumer's client device using a browser application as is well-known in the art. The consumer may be browsing a web site containing the web page as part of an online shopping experience. The image of the cup is generic; although the cup may be offered for sale in different sizes and colors, there are no features of the cup which identify it as unique to a particular individual. A consumer may wish to personalize the cup with their name, a favorite saying, a personal photograph, artwork, decals, and so on. For example, a consumer may wish to apply the image 200 of Figure 2 to the cup, to memorialize a camping trip. Prior approaches have provided the consumer with a mechanism for specifying such personalized features to apply to

the cup, but have not provided a realistic manner of showing the consumer how the final, personalized product will look prior to making a purchase decision.

Figure 3 shows a composite image in accordance with an embodiment of the present invention. The personal photo 200 of Figure 2 has been projected onto the image 100 of the cup of Figure 1. The composite image 300 may then be shown to the consumer via a web page as part of an electronic commerce transaction. One process of providing such a projection of the personalized merchandise is described more fully with respect to Figure 4. The result is a composite image that realistically represents the appearance of the personalized merchandise (e.g., the cup as personalized by the consumer). Note that image 200 is not just placed (or pasted) over the image 100; instead image 200 is mathematically projected onto the item represented in image 100. This gives the consumer the view of the merchandise as it will look after the image 200 has been physically applied to it.

Figure 4 shows a process for ordering personalized merchandise according to an embodiment of the present invention. At 302, the client device of an online consumer (e.g., a personal computer (PC), a handheld computer, a personal digital assistant (PDA), a cell phone, or other processing device executing a browser application program and coupled to a computer network such as the Internet) may be provided with an image of an article of merchandise by a server computer (e.g., a server of a merchant web site). At 303, the consumer (via interaction between the client device and the server of a merchant web site) specifies or otherwise selects the image of the item of merchandise of

interest to the consumer. At 304, the consumer specifies personalized content to be applied to the merchandise item. This content may take the form of text, image, other content (such as, for example, a bit sequence representing a personal signature or other symbol), or any other visual form. When the content is an image, it may be, for example, a personal photo, an image of artwork, a decal, a logo, an icon, a pattern, a design, and so on. In one embodiment, the image may be either two-dimensional (2D) or three-dimensional (3D).

The consumer may provide the content, for example by uploading, e-mailing, or otherwise electronically communicating the content to the site that is offering the merchandise. Alternately, server computer operating the web site that offers the merchandise may provide the consumer with the capability to create or select the previously created content. In this instance, the content may be provided on a web page for the consumer to select particular images from, or the content may be interactively created by the consumer using a content creation application program (e.g., a drawing program). The server computer may receive communications from the client device as commands to create the content.

At 306, the personalizing content is mathematically projected onto the image of the article of merchandise according to a surface function of the article of merchandise using techniques known in the 2D and 3D computer graphics arts to produce a composite image. The projection may be done at a location on the image of the item of merchandise specified by the consumer, or at a predetermined location.